STUDIES IN BIGNONIACEAE 17: *KIGELIANTHE*: A SYNONYM OF *FERNANDOA* (BIGNONIACEAE)[1]

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Kigelianthe of Madagascar is not separable from *Fernandoa* of continental Africa. The two genera seem to have been maintained separate as the result of a combination of historical accident and botanical provincialism. In fact the affinity of *Kigelianthe* with *Fernandoa* has never even been mentioned in the literature. A brief history of the situation may help in its clarification.

Fernandoa (sphalm *Ferdinandia*) was described by Seemann in 1865 as a new genus of Tecomeae with the single species *F. superba* based on a collection of Welwitsch from Angola. In 1870 Seemann described a second species from East Africa as *F. magnifica* (sphalm *Ferdinandoa*) and in 1911 Gilg and Mildbraed described a third species from the Belgian Congo (Zaïre) as *Ferdinandia adolfi-friderici.* A fourth species, *Ferdinandia mortehani* De Wild, is probably not distinct from *F. adolfi-friderici.* The plethora of mispellings of *Fernandoa* (*Ferdinandia, Ferdinandoa, Ferdinandia, Ferdinanda, Ferdinandio, Ferdinandi*), including that of the original description, is discussed by Milne-Redhead (1949) who also pointed out that the corrected spelling of the genus means the combination *Fernandoa ferdinandi,* based on Welwitsch's *Bignonia ferdinandi,* is not a tautonym and should be adopted for the type species. Sillans (1951, 1953) later described *Tisserantodendron* as a new genus of Central African Bignoniaceae with two species, one from Gabon and one from Oubangui-Chari (Central African Republic). Heine (1964) discovered that Sillans' genus was synonymous with *Fernandoa* and its two species synonymous with the two Equatorial African *Fernandoa* species.

Meanwhile Baker (1881) had discovered a new species of Bignoniaceae from Madagascar in a collection of plants made by L. Kitching. He described it, in the absence of fruit, in the indehiscent-fruited tribe Crescentieae as *Kigelia madagascariensis.* Baillon (1888) described *Kigelianthe* as a new genus of Tecomeae endemic to Madagascar from material, including fruits, collected by Grevé and Hildebrandt but in fact representing the same species as *Kigelia madagascariensis.* Baillon thought this material to represent two species but Perrier de la Bathie (1938*a*, 1938*b*) considered these to be varieties. Baker (1888) and Scott Elliot (1890) described two more species of this genus from Madagascar under *Colea* (tribe Crescentieae) and these were transferred to *Kigelianthe* by Perrier de la Bathie as *K. macrantha* and *K. coccinea.* Sprague (1904) pointed out that Baker's *Kigelia madagascariensis* rightly belonged in *Kigelianthe.*

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[1] The impetus for this paper came from a visit to Madagascar sponsored by a National Geographic Society grant to Dr. Peter Goldblatt, Missouri Botanical Garden. The resultant opportunity of seeing *Kigelianthe* in flower first called my attention to its similarity with *Fernandoa.*

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Kigelianthe was compared to the very different Asian *Radermachera* by Baillon who apparently had seen no specimens of *Fernandoa* and based his concept entirely on Seemann's plate. That all essential characters of his *Kigelianthe* agreed with those of *Fernandoa* was overlooked by Baillon and all subsequent authors. Both genera have large, irregularly-several-labiate calyces; large, campanulate, red-orange (yellow in one species of *Fernandoa*) corollas; subexserted stamens; linear, subterete, longitudinally-striate capsules dehiscing perpendicularly to a flat septum; imparipinnately compound leaves; large discs; ovules many-seriate in each locule; and thin, usually, bialate seeds. In fact the two genera are so similar that *F. magnifica* probably has more in common with *K. madagascariensis* than with *F. adolfi-friderici*. Both genera have three species and include dry forest shrubs or small trees (*K. madagascariensis*, *K. macrantha*, *F. magnifica*) and taller moist forest trees (*K. coccinea*, *F. adolfi-friderici*, *F. ferdinandi*). The only character, and that an insignificant one, by which the two genera could be morphologically separated appears to be the less broadly campanulate corollas of the Madagascar species.

Why was the close relationship of these striking plants overlooked for so long? Chance played a part: had the species of *Kigelianthe* not all been originally described without fruiting material their relationships might have been sought in the Tecomeae rather than the Crescentieae; had Baillon seen material of *Fernandoa* he might have realized its identity with his proposed new genus. A kind of botanical provincialism seems to have been partially responsible for some of the problems. Species of both genera were first described by English botanists and subsequently redescribed with a new generic name by French botanists. In each case a second French worker corrected the oversight of his predecessor. But no one familiar with the Bignoniaceae of either Madagascar or continental Africa seems to have looked critically at the plants of the other region.

Placing *Kigelianthe* in synonymy under *Fernandoa* brings the number of species in that genus to six making it rather large by Bignoniaceae standards (*cf.* Gentry, 1973). The three new combinations needed in *Fernandoa* are:

1. **Fernandoa coccinea** (Scott Elliot) A. Gentry, comb. nov.

Colea coccinea Scott Elliot, Jour. Linn. Soc. Bot. 29: 36. *t.* 9. 1890.
Kigelianthe coccinea (Scott Elliot). H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 19. 1938.

Distribution: Eastern Madagascar north to vicinity of Fenerive.

2. **Fernandoa macrantha** (Baker) A. Gentry, comb. nov.

Colea macrantha Baker, Jour. Linn. Soc. Bot. 25: 337. 1888.
Kigelianthe macrantha (Baker) H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 19. 1938.

Distribution: Ambongo-Boina region of western Madagascar (vicinity of Majunga).

3. **Fernandoa madagascariensis** (Baker) A. Gentry, comb. nov.

Kigelia madagascariensis Baker, Jour. Linn. Soc. Bot. 18: 274. 1881.
Kigelianthe grevei Baill. ex K. Schum. in Engl. & Prantl, Natürl. Pflanzenfam. 4(3b): 244. 1894. nom. nud.

Kigelianthe hildebrandtii K. Schum. in Engl. & Prantl, Natürl. Pflanzenfam. 4(3b): 244. 1894. nom. nud.

Kigelianthe madagascariensis (Baker) Sprague ex H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 20. 1938.

Kigelianthe grevei Baill. ex H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 20. 1938. pro. syn.

Kigelianthe hildebrandtii Baill. ex H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 20. 1938. pro. syn.

Kigelianthe madagascariensis var. *hildebrandtii* Baill. ex H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 21. 1938.

Kigelianthe madagascariensis var. *grevei* Baill. ex H. Perr., Ann. Mus. Col. Marseille, ser. 5, 6: 21. 1938.

Distribution: Lowland western Madagascar from vicinity of Antsohihy in the north to Cap Sainte-Marie in the south.

The three previously recognized species of *Fernandoa* are:

4. **Fernandoa ferdinandi** (Welw.) Milne-Redhead, Kew Bull. 1948: 170. 1949. (see Heine, 1964, for synonymy).

Distribution: West Equatorial Africa: Gabon, Angola.

5. **Fernandoa adolfi-friderici** (Gilg & Mildbraed) Heine, Adansonia, n.s. 4: 469. 1964. (see Heine, 1964, for synonymy).

Distribution: Equatorial Africa: Zaïre, Oubangui-Chari (Central African Republic), Cameroun.

6. **Fernandoa magnifica** Seem., Jour. Bot. 8: 280. 1870. (see Milne-Redhead, 1948, for synonymy).

Distribution: Lowland East Africa: Kenya, Tanzania, Mozambique, Rhodesia.

Perichlaena, a monotypic genus endemic to northwest Madagascar is also closely related to *Fernandoa*. It is separated by its scandent habit; more strongly bilabiate corolla; ovules 2-seriate in each locule; shorter, flattened, non-striate fruit; and seed wing surrounding the seed body. These characters seem adequate for generic separation.

In flower *Fernandoa* may be distinguished from other African genera of Bignoniaceae by the large, campanulate, red to yellow corolla, similar to that of the African Tulip Tree (*Spathodea*) and by the irregularly-several-labiate (not spathaceous) calyx. In fruit it is unique among African/Madagascar bignons in possessing a slender, subterete capsule dehiscing perpendicularly to a thin flat septum.

The species of *Fernandoa* may be distinguished by the following key[3].

a. Corolla relatively small, 20–25 mm long; flowers yellow .... *F. adolfi-friderici*
aa. Corolla large, 50 cm or more long; flowers red-orange or orange-red with yellow in throat (a rare yellow-flowered form of one species also known).
  b. Ovary tomentose; leaves densely and finely tomentose below; western Equatorial Africa .... *F. ferdinandi*
  bb. Ovary glabrous; leaves often glabrous or glabrescent; eastern Africa or Madagascar.

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[3] I have seen no specimens of *F. ferdinandi* and *F. macrantha*; the key characters are taken from the literature.

c. Corolla very broadly campanulate; inflorescence a racemose cyme; pedicels more than 4 cm long; East Africa .... *F. magnifica*

cc. Corolla less broadly campanulate; inflorescence a paniculate cyme; pedicels less than 2 cm long; Madagascar.

  d. Corolla with sessile glands at base of stamens; fruit with 16 longitudinal ribs; seed wings reduced, essentially lacking .... *F. macrantha*

  dd. Corolla with stalked glands or long trichomes at base of stamens; fruit finely striate; seed wings well developed.

    e. Anther thecae divergent; corolla with short, gland-tipped trichomes at level of stamen insertion .... *F. coccinea*

    ee. Anther thecae parallel; corolla with long trichomes at level of stamen insertion .... *F. madagascariensis*

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